

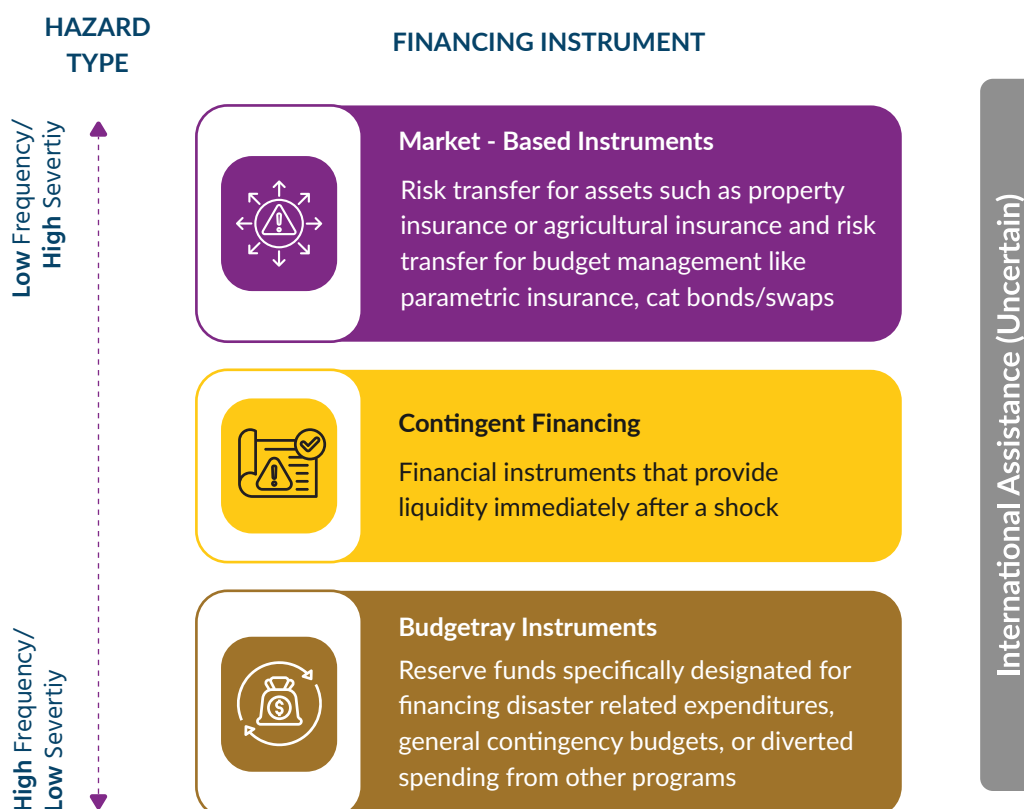
NOTE 1

Risk Layering Explained

Risk layering is an approach to managing the financial impacts of natural disasters by cost-effectively combining different sources of pre-arranged funding. It is based on the principle that no single financial instrument can provide suitable and affordable financial protection against all possible risks (i.e., events of different frequency and intensity, resulting from different types of hazards).

A robust risk layering strategy pre-arranges predictable funding by combining different financing instruments (Figure 1) to address any residual risk that cannot be reduced or eliminated through disaster risk reduction or risk management activities. It typically focuses on short-term funding needs—for example, emergency response activities where a country otherwise faces a liquidity crunch. Longer-term financing needs can often be more effectively met through other means, such as tax raises, borrowing, and other external financing. Risk layering ensures that instruments that provide access to cheaper sources of financing (e.g., reserve funds) are used for high-frequency/low-severity events, while more costly instruments (e.g., insurance) are used for the most severe and infrequent events.

Figure 1: Different pre-arranged financing instruments combined in a risk layering strategy



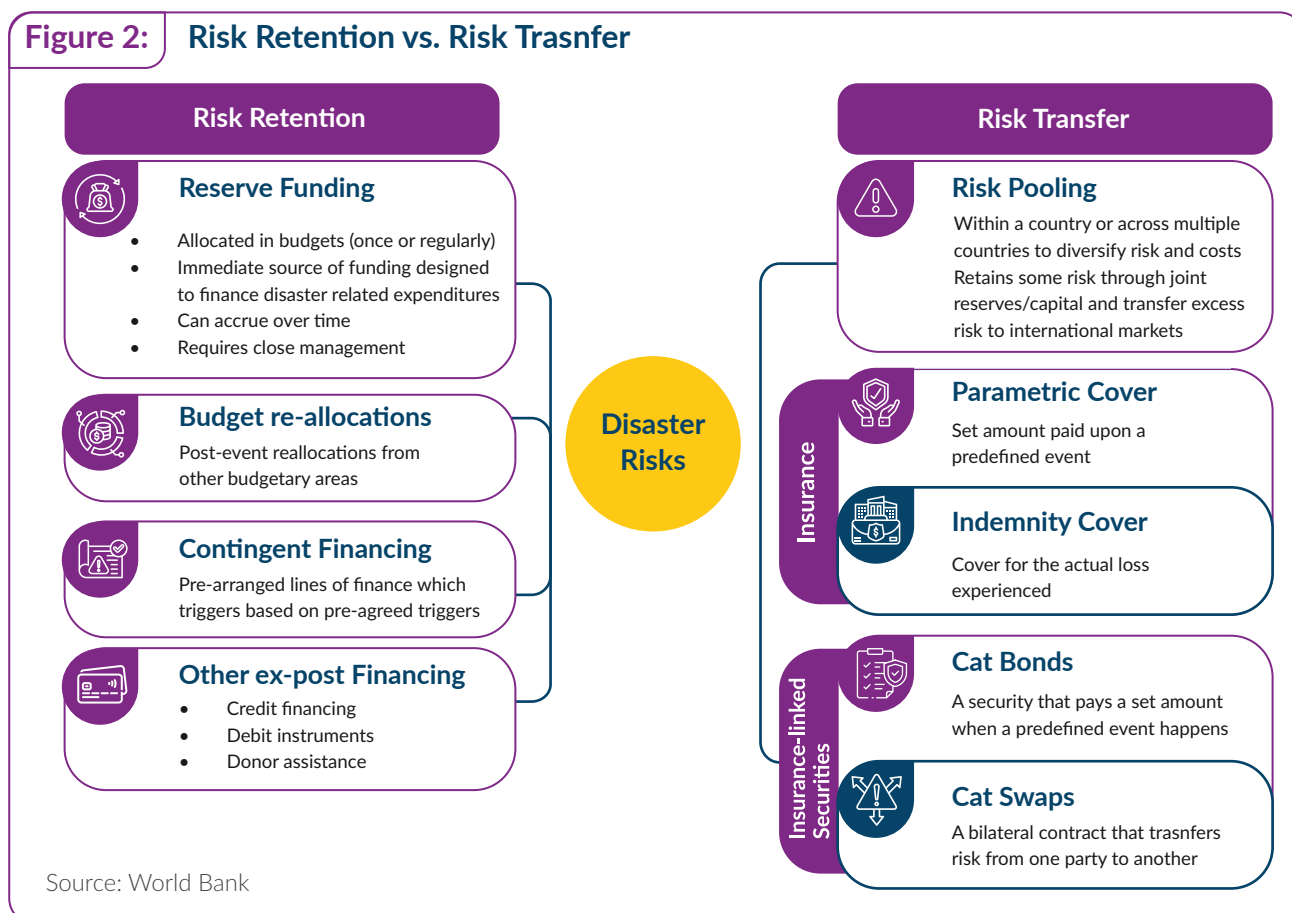
Source: World Bank

Risk layering strategies make use of two types of financing instruments, those that retain risk and those that transfer risk (Figure 2):

Risk retention: Risk is retained on the government balance sheet. If a disaster event occurs, financing is likely to be provided from either budget allocations or pre-agreed contingent lines of credit. Risk retention makes use of both budgetary instruments and contingent financing (as shown in Figure 1).

Risk transfer: Risk is transferred away from the government's balance sheet through a commercial contract that requires payment of a premium (i.e., the cost of the insurance contract). Through an insurance contract, the government can then receive a financial payment from a third party (typically an insurance company) upon the occurrence of an eligible disaster event. This money can then be used to respond to the event—for example, by supporting relief or longer-term recovery. Risk transfer instruments can be implemented at different geographic levels, can cover both the public and private sector, and can be structured to protect different types of assets (e.g., buildings, populations, crops, etc.). In addition, risk transfer instruments can be designed to provide compensation for incurred losses (e.g., indemnity insurance, which provides a payment commensurate to the extent of the damage actually caused by the disaster) or to provide compensation based on pre-agreed parameters (e.g. parametric insurance, which provides a pre-specified payment if a covered event meets or exceeds a pre-defined threshold).

Figure 2: Risk Retention vs. Risk Transfer



To determine the most suitable risk layering strategy, the cost implications and characteristics of each product need to be considered and compared in view of the risk profile of the country (potential losses can be modelled through risk analytics) and the policy priorities of the government. The World Bank's Crisis and Disaster Risk Finance (CDRF) Value for Money process provides a sound and transparent methodology and set of analytical tools to support governments in their decision-making around risk layering.

FAQs

How does a country start developing a risk layering strategy?

Prior to developing a risk layering strategy, a country should determine its vision and objectives for CDRF. The World Bank's engagement with country clients typically starts with a CDRF diagnostic; which provides an overview of the risks a country is exposed to, their historic and potential impacts, and related funding needs. In addition, a CDRF diagnostic reviews the institutional arrangements and legal framework guiding CDRF in the country, as well as the risk retention and risk transfer instruments available. Based on their policy priorities, governments use this diagnostic to inform their layered CDRF strategy and associated operational implementation plan.

How should a country decide which instruments to use?

When considering a layered CDRF strategies, governments should first identify their protection objectives (who they want to protect and against what risks?) and funding needs (what level of coverage are they hoping to achieve?). Different combinations of existing and potential additional instruments should then be selected and assessed for their cost-effectiveness in addressing the policy objectives and needs identified (see figure 4).

The World Bank can help governments make decisions on which risk financing instruments to include in their risk layering strategy using actuarial science, economics, and catastrophe risk modeling.

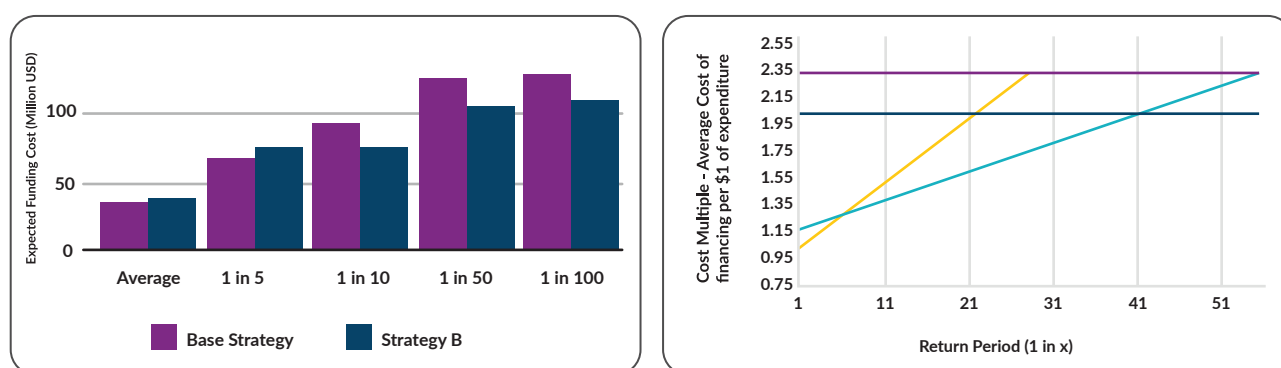
Figure 4: Steps to identify a cost-effective mix of pre-arranged financing instruments



Source: World Bank

Alongside country-specific data and analysis, the World Bank uses various in-house analytical tools. These include interactive capacity-building tools as well as more customizable tools to support governments in their risk finance decision-making—e.g., by quantifying the risk facing countries and by directly comparing alternative strategies (see figure 5).

Figure 5: Comparing different CDRF strategies



Source: World Bank

Reading List

An analytical methodology for comparing and layering risk financing instruments:

Clarke, Daniel Jonathan, Olivier Mahul, Richard Andrew Poulter, and Tse Ling Teh. 2016.

“Evaluating Sovereign Disaster Risk Finance Strategies: A Framework.” Policy Research Working Paper 7721, World Bank, Washington, DC.

<https://documents.worldbank.org/en/publication/documents-reports/documentdetail/430111468184437717/evaluating-sovereign-disaster-risk-finance-strategies-a-framework>.

An economic and practical rationale for DRF and risk layering:

Ghesquiere, Francis, and Olivier Mahul. 2010. *Financial Protection of the State Against Natural Disasters: A Primer*. Policy Research Working Paper 5429, World Bank, Washington, DC.

<https://documents.worldbank.org/en/publication/documents-reports/documentdetail/227011468175734792/financial-protection-of-the-state-against-natural-disasters-a-primer>.

¹Financial Protection Forum, “Online Learning: Exercises Using Data and Analytics,”

<https://www.financialprotectionforum.org/online-learning-exercises-using-data-and-analytics>.

The economics of and practical rationale for DRF and risk layering:

Ghesquiere, Francis, and Olivier Mahul. 2010. "Sovereign Natural Disaster Insurance for Developing Countries: A Paradigm Shift in Catastrophe Risk Financing." Policy Research Working Paper 4345, World Bank, Washington, DC.

<https://documents.worldbank.org/en/publication/documents-reports/documentdetail/538391468150588169/sovereign-natural-disaster-insurance-for-developing-countries-a-paradigm-shift-in-catastrophe-risk-financing>.